

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
15 January 2004 (15.01.2004)

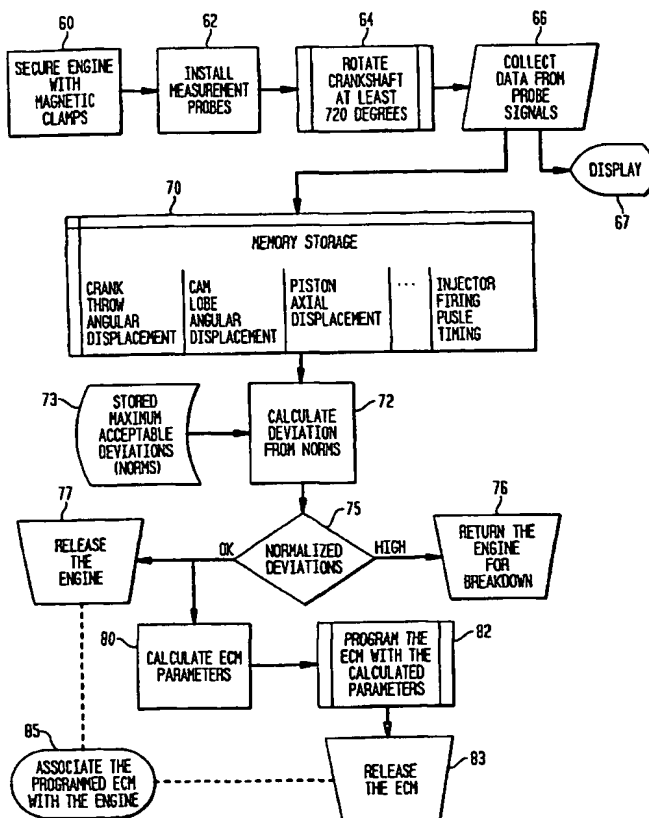
PCT

(10) International Publication Number
WO 2004/005689 A1

- (51) International Patent Classification⁷: F02D 41/34, 41/26
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- (21) International Application Number: PCT/US2003/020729
- (72) Inventors; and
- (22) International Filing Date: 2 July 2003 (02.07.2003)
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- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data: 60/393,648 2 July 2002 (02.07.2002) US
- (74) Agents: ROHM, Benita, J. et al.; Rohm & Monsanto P.L.C., 660 Woodward Avenue, Suite 1525, Detroit, MI 48226 (US).
- (63) Related by continuation (CON) or continuation-in-part (CIP) to earlier application: US 60/393,648 (CON) Filed on 2 July 2002 (02.07.2002)
- (81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC,

[Continued on next page]

(54) Title: SYSTEM FOR IMPROVING ENGINE PERFORMANCE AND REDUCING EMISSIONS



(57) Abstract: A method of correcting engine performance in response to assembly deviations includes the steps of measuring the physical characteristics of each cylinder of the engine, and storing the resulting data in the associated ECM. The engine is then operated in accordance with the stored data. The physical characteristics that are measured include, *inter alia*, a distance of axial displacement of each piston within its associated cylindrical bore; a timing characteristic of the camshaft; a timing of a fuel injection interval; the rate of fuel flow as a function of crankshaft angle of rotation, and a timing characteristic of the crankshaft. Some of the operating parameters that are controlled during engine operation in response to the data stored in the ECM include, *inter alia*, the air:fuel ratio and the timing of a fuel injection interval for each piston. These corrections result in increased power, decreased emissions, better mileage, a smoother running engine, and less costly components.



SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA,
UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

- with international search report
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INTERNATIONAL SEARCH REPORT

International Application No
PCT/US 03/20729

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 F02D41/34 F02D41/26

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 F02D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X A	US 6 082 330 A (BECKER MATTHIAS ET AL) 4 July 2000 (2000-07-04) column 2, line 43 - line 49 column 2, line 63 - column 3, line 13 column 4, line 51 - line 59 column 6, line 23 - column 7, line 35 figures 1,2	1-9,17, 25,27, 42,43 44
X	--- US 5 775 299 A (ITO TAKESHI ET AL) 7 July 1998 (1998-07-07) column 1, line 23 - line 27 column 4, line 43 - line 50 column 5, line 19 - line 44 column 6, line 1 - line 12 column 6, line 56 - line 57 --- -/-	1,6,10, 11,25, 26,42,43

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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Date of the actual completion of the international search

24 October 2003

Date of mailing of the international search report

06/11/2003

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INTERNATIONAL SEARCH REPORT

International

Application No

PCT/US 03/20729

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>EP 0 810 362 A (YAMAHA MOTOR CO LTD) 3 December 1997 (1997-12-03) page 5, line 2 - line 5 page 5, line 19 - line 27 page 8, line 51 - page 9, line 10 page 18, line 16 - line 27 figure 6</p> <p style="text-align: center;">-----</p>	<p>1,6,8, 12,42</p>

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